

1 The Potting Shed



1 Unit summary

The transformation of a seed or bulb into a plant is an everyday miracle that never ceases to amaze and inspire. In this unit, children set up a potting shed where they develop their skills and confidence as gardeners and increase their knowledge about plants.

Science learning

Children will begin to recognise and name a variety of different plants, not only the ones that they grow but native plants that may, as weeds, need to be removed from their garden. They will also begin to confidently talk about what a plant needs to thrive, including light, water and soil.

Science for practitioners

Seeds are produced through sexual reproduction. In flowering plants, the male part of the flower produces pollen which is then transferred to the female part of the flower in a different plant either by insects or the wind. This then develops into a seed which contains the characteristics of both parent plants. People have used this phenomenon to develop new strains of

plants, e.g. with bigger fruit or more brightly coloured flowers. However, when new plants are produced from bulbs, tubers or cuttings, they are exact reproductions of the original plant with no genetic variation.

Science progression

In KS1, children will learn about the part that plants play in food chains and recognise that plants form an important part of a habitat. In KS2 they will need to be able to describe the function of different parts of a plant and to investigate the variety of ways that seeds are dispersed from the parent plant.

Switched on Science links

- Key Stage 1, Year 2, Topic 5 – Young Gardeners

Prime areas

Communication and Language

By encouraging children to report to families about the plants that are growing in school, and in school about the plants that they are growing at home, we ensure that children have a 'real' audience who does not already know the information.

Personal, Social and Emotional Development

Plants are an appropriate way to give children the responsibility of caring for a living thing. Telling children sensitively how a plant that they have forgotten to water is beginning to wilt,

and then taking steps to remedy the situation, is a valuable way for children to realise that their actions can have a significant effect on other living things.

Physical Development

Exploring and handling seeds of different shapes and sizes is a motivating context for children to practise their fine motor control; children may enjoy using tweezers to sort the seeds.

Growing plants can encourage children to want to eat them too (where appropriate), so can support the development of a confident approach to tasting new fruits and vegetables.

Specific areas

Literacy

Designing and making seed packets enables children to record information about plants and seeds and what they need to make them grow. Sequencing pictures of planting seeds or stages of seed development will help children to talk about what is happening in a logical way.

Mathematics

Children can be encouraged to organise the potting shed by sorting plant pots according to size and organising seeds into individual containers or drawers. Growing sunflowers or other tall, fast-growing plants such as runner beans or hollyhocks are a great context for measuring. (However, please note that hollyhocks can be an irritant to some children.)

Understanding the World

Plan for children to visit a greenhouse or a potting shed to find out what happens there, how tools are stored and how gardeners 'pot' the plants. When they return to school, they can be involved in setting up their own potting shed, making decisions based on the visit and any personal knowledge they have from home.

Expressive Arts and Design

Acting out the development of a seed into a plant may well be something that practitioners remember from their own childhood. However, it remains a common activity that works well, especially when combined with music.



2 Getting ready



Resources

Bulbs, Dibbers, Forks, Gardening gloves, Grow bags, Online resources via My Rising Stars, Peat-free compost, Plant pots, Rakes, Range of seeds and young plants, Seed identification poster ('Seeds all around us'), Spades, Trowels, Tuff Spot or Tray (available from educational suppliers).

The Royal Horticultural Society school gardening website offers free seeds to schools.

There are lots of resources on the Science and Plants for Schools (SAPS) website.



Websites and books

The Gigantic Turnip – Aleksei Tolstoy & Niamh Sharkey

Eddie's Garden – Sarah Garland

Jim and the Beanstalk – Raymond Briggs

Ten Seeds – Ruth Brown

Garden Organic website

Grow Your Own Potatoes website



Key vocabulary

Bulb, Compost, Dibber, Flower, Fork, Fruit, Grow,

Harvest, Leaf, Petal, Plant, Pot, Rake, Root, Root hairs, Seed, Sepal, Soil, Spade, Stem, Trowel, Water, Weed.



Home science links

If possible, enlist the help of one or two enthusiastic gardeners to work with small groups of children in the potting shed and tending any outside area, including pots and gardens.



Health and safety

Children should be taught to:

- handle and store tools.
- check with an adult before eating any produce.
- wash their hands thoroughly after gardening.

Adults should:

- be aware that much common plant material, including some bulbs and leaves, can be an irritant to skin or poisonous to eat.
- use seeds that are not coated with a fungicide.
- check that the ground is safe and not contaminated with animal faeces.
- use ASE's *Be Safe!* or the CLEAPSS website to check which plants are safe to use.



3 Explorations

Spring is a great time for children to sow lots of seeds. It is also valuable to plan time for planting bulbs and harvesting crops in the autumn and to notice the plants in their environment throughout the year.

Introductory activity

Spend some time with the children setting up a planting and growing area in the classroom. Provide a variety of pots, trays, compost and plant labels. Plan for some adult-guided sessions where children are supported to plant a variety of seeds (sunflower seeds, runner beans, pot

marigolds, pumpkins and peas are all large, easy-to-handle seeds), and to re-pot plants that have grown from smaller into larger pots. This will be an opportunity for children to learn how to handle the plants and the seeds so that they survive and grow.

Focussed exploration

Activity 1 – Bulbs

Planting bulbs indoors and outside, in the ground, will add another dimension to children's growing experience. Spend some time ensuring that children know what the different parts of the bulb are; show them where the roots will grow and where the shoot will emerge. Growing a prepared hyacinth bulb in a hyacinth growing glass jar will allow children to see

the process as it happens. If children plant some daffodil bulbs in the outdoor garden, instead of deadheading them in the spring let the seed heads ripen until the seeds rattle inside the seed pods. Letting the children harvest and grow these seeds will help them to avoid the common misconception that plants that grow from bulbs don't have seeds.

Activity 2 – Jack and the Beanstalk Trial

Introduce this activity by retelling the story of Jack and the Beanstalk. Ask children what they think the quality would be that Jack would be looking for in a beanstalk. They can then perform their own 'Beanstalk Trial'. They could start by comparing the seeds (runner bean seeds can be black, white, red or mottled, depending on the variety). The children will then need to sow the plants in pots and plant

them out once all risk of frost has passed. As well as comparing and recording the size of the different plants, children are likely to be fascinated by the different coloured flowers and the appearance of the beans. They will enjoy tasting them to see if they taste different too! Perhaps with adult help they could write a letter to Jack to let him know which variety of bean they recommend.

Activity 3 – Seed Collectors

Encourage children to collect and grow seeds from as wide a range of sources as possible; this will help them to understand how central plants are to our lives. Moreover, seeing a mango or avocado stone, a conker or some chickpeas transform into a living, growing plant is fascinating and enjoyable. Children may not be able to harvest

avocados from their plant but they will certainly have a handsome house plant and have learned a valuable lesson about where food comes from. Collecting a wide range of seeds also gives lots of opportunities for observing (do provide magnifying glasses) and sorting according to a wide range of criteria.

Free-flow exploration

Activity 1 – In the Potting Shed

As well as planning adult-guided sessions for the potting shed, make it available for free-flow exploration. Include potting compost, plants for children to dig up, replant and dig up again and

a variety of seeds. Plant labels or lolly sticks will enable children to label their plants. From time to time children could be asked to sort out the plant pots or seeds into the correct shelves, drawers or containers.

Activity 2 – The Garden Centre

Provide a till and encourage children to design seed packets and posters advertising plants and produce for sale. Occasionally, when there is a glut of newly

potted plants or produce, children can set up a stall and sell to families for real – perhaps as part of an open morning or after school.

Taking it further

Put a few seeds in a small box so that they rattle when shaken. Pretend to be mystified by what is in the box (perhaps you could arrange for it to arrive through the post?). Let children feel and shake the box and guess what might be inside.

Following this unit, all of the children are likely to recognise that these are seeds. Children are likely to suggest planting them to find out. Give children the responsibility of planting, growing and identifying them with as little adult support as necessary.



4 Characteristics of effective learning

Playing and exploring

- Children suggest planting seeds that they find, e.g. while eating fruit or playing outside.
- Children are keen to let Jack know the results of their 'Beanstalk Trial'.

Active learning

- Children remember to care for their plants, perhaps asking if they can water them.

- After planting the seed or bulb that they have been given during an adult-led activity, children ask to stay and plant more.

Creating and thinking critically

- Children make suggestions about how to overcome problems, e.g. suggesting making a scarecrow when birds eat some of their strawberries.
- In 'Taking it further' children are able to make sensible predictions about what might be in the box, based on size and the sound that it makes when shaken.

Early learning goals

ELG 1 Listening & Attention: All activities; **ELG 2 Understanding:** All activities; **ELG 3 Speaking:** All activities; **ELG 4 Moving & Handling:** All Focussed explorations; **ELG 5 Health & Self-care:** All activities; **ELG 6 Self-confidence & Self-awareness:** All activities; **ELG 7 Managing Feelings & Behaviour:** All Free-flow explorations; **ELG 8 Making Relationships:** All Free-flow explorations; **ELG 9 Reading:** All Focussed explorations; **ELG 10 Writing:** Focussed exploration 2; **ELG 11 Numbers:** Free-flow exploration 1; **ELG 12 Shape, Space & Measure:** All Focussed explorations; **ELG 13 People & Communities:** Finding out about the crops grown by people in the school community; **ELG 14 The World:** All growing activities; **ELG 15 Technology:** All growing activities; **ELG 16 Exploring & Using Media & Materials:** All growing activities; **ELG 17 Being Imaginative:** Free-flow exploration 2.